Forklift Alternators

Alternator for Forklift - An alternator is a device which changes mechanical energy into electric energy. It does this in the form of an electrical current. Basically, an AC electric generator can be referred to as an alternator. The word usually refers to a small, rotating machine powered by automotive and various internal combustion engines. Alternators that are located in power stations and are driven by steam turbines are referred to as turbo-alternators. Nearly all of these machines utilize a rotating magnetic field but every so often linear alternators are utilized.

A current is produced in the conductor whenever the magnetic field surrounding the conductor changes. Generally the rotor, a rotating magnet, spins within a set of stationary conductors wound in coils. The coils are located on an iron core known as the stator. If the field cuts across the conductors, an induced electromagnetic field otherwise called EMF is produced as the mechanical input causes the rotor to revolve. This rotating magnetic field produces an AC voltage in the stator windings. Typically, there are 3 sets of stator windings. These physically offset so that the rotating magnetic field induces 3 phase currents, displaced by one-third of a period with respect to each other.

In a "brushless" alternator, the rotor magnetic field could be caused by induction of a lasting magnet or by a rotor winding energized with direct current through slip rings and brushes. Brushless AC generators are normally located in bigger machines compared to those used in automotive applications. A rotor magnetic field may be produced by a stationary field winding with moving poles in the rotor. Automotive alternators often utilize a rotor winding that allows control of the voltage generated by the alternator. This is done by changing the current in the rotor field winding. Permanent magnet machines avoid the loss due to the magnetizing current inside the rotor. These devices are limited in size due to the cost of the magnet material. As the permanent magnet field is constant, the terminal voltage varies directly with the generator speed.